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IN THE CLAIMS:

1. (Previously Presented) An improved acoustic window for an acoustic waveform passage having a generally uniform transmission loss at an angle of incidence of between -40° and +40° comprising a laminate composition formed from at least one core layer and at least two septa, said core layer comprising a material having a generally low-acoustic-impedance, a static shear modulus between about 1.0 psi (0.07 MPa) and about 15,000 psi (103 MPa), an average transverse (or through-thickness) sound velocity for the acoustic waveform of between about 700 and about 2200 meters per second, a transverse acoustic impedence of less than or equal to 4 $X10^6$ kilograms per square meter-second, and a shear loss factor of greater than 0.02,

each of said septa being composed of at least one ply of a material having a transverse acoustic impedance of less than 60 x 10^6 kg/m^2-sec, a thickness of less than 0.10 λ_M, wherein λ_M is a wavelength of an acoustic wave in the material, a tensile modulus of more than 0.5 x 10^6 psi, and being bonded to said core to form a sandwich with said core layer, and

the acoustic waveform having a λ of at least 0.001 meter and less than 3 meters.

2. (Original)The acoustic window of claim 1 wherein said core layer comprises a composition selected from the group consisting of polyurethane, neoprene, nitrile rubber, EPDM, butyl rubber, natural rubber, synthetic rubber, polyisoprene, polystyrene-butadiene, polybutadiene, polychloroprene, high impact polystyrene, copolymers of polystyrene, fluoropolymer, polyolefin, polyetheretherketone, and blends thereof.

3. (Original) The acoustic window of claim 1 wherein each septa is composed of at least one ply of a metal, a plastic, a fiber reinforced composite, or combinations thereof.

4. (Original) The acoustic window of claim 3 wherein the septa is a metal selected from the group consisting of aluminum, titanium, and combinations thereof.

5. (Original) The acoustic window of claim 1 wherein each septa is composed of at least one ply of a fiber reinforced composite.

6. (Original) The acoustic window of claim 5 wherein the fiber in said fiber reinforced composition is selected from the group consisting of glass fibers, ceramic fibers, carbon fibers, aramid fibers, graphite fibers, mineral fibers, metal fibers, and combinations thereof.

7. (Original) The acoustic window of claim 5 wherein the fiber reinforced composition employs as the binder a thermosetting or thermoplastic polymer.

8. (Original) The acoustic window of claim 5 wherein the fiber reinforced composition employs as the binder a thermosetting or thermoplastic polymer selected from the group consisting epoxies, polyesters, vinyl esters, fluoropolymers, nylons, or rubber toughened epoxies, or combinations thereof.

9. (Original) The acoustic window of claim 5 wherein said fiber reinforced composition is a fiber reinforced epoxy composition.

10. (Original) The acoustic window of claim 1 wherein the average transverse sound velocity is between about 1400 and 2200 meters per second.

11. (Original) The acoustic window of claim 1, wherein the window has an average sound velocity of about 1800 to 2100 meters per second.

12. (Original) The acoustic window of claim 1 wherein the core has a static shear modulus of between about 100 and 2000 psi.

13. (Currently Amended) The acoustic window of claim 1 wherein each septa has a thickness of less than 0.05 λ_M, wherein λ_M is the wavelength of an acoustic wave in the window.

14. (Previously Presented) The acoustic window of claim 1 wherein the window has a thickness of less than 1.0 λ_W, wherein λ_W is the wavelength of an acoustic wave in the window.

15. (Previously Presented) The acoustic window of claim 1 wherein the window has a thickness of less than 0.75 λ_W, wherein λ_W is the wavelength of an acoustic wave in the window.

16. (Original) The acoustic window of claim 1, wherein the window has generally uniform transmission loss an angle of incidence of between -60° and +60°.

17. (Original) The acoustic window of claim 1, wherein the window has generally uniform transmission loss an angle of incidence of between -80° and +80°.

18. (Original) The acoustic window of claim 1, wherein the septa has a tensile and/or compression strength of more than 25,000 psi.

19. (Original) The acoustic window of claim 1, wherein the septa has a tensile and/or compression strength of more than 70,000 psi.

20. (Original) The acoustic window of claim 1 wherein the core layer has a Poisson's ratio of more than 0.45.

21. (Original) The acoustic window of claim 1 wherein the core layer has a Poisson's ratio of more than 0.49.

22. (Original) The acoustic window of claim 1 wherein the core layer and/or septa employ fibers and/or microspheres.

23. (Original) The acoustic window of claim 1, wherein the window has specific gravity in the range of 1.0 to 1.4.

24. (Original) The acoustic widow of claim 1 wherein the window has SpGr in the range of 1.1 to 1.3.

25. (Original) The acoustic window of claim 1, wherein the window has a structural factor of greater than 1.

26. (Original) The acoustic window of claim 1, wherein the window has a structural factor of greater than 2.

27. (Original) The acoustic window of claim 1, wherein the core has acoustic impedance of less than $2 \times 10^6 kg/m^2-s$.

28. (Original) The acoustic window of claim 1, wherein the septa has an acoustic impedance of less than $10 \times 10^6 kg/m^2-s$.

29. (Original) The acoustic window of claim 1, wherein the septa has an acoustic impedance of less than 5 x 10^6kg/m^2–s.

30. (Previously Presented) The acoustic window of claim 1, wherein the septa are bonded to the core using an adhesive layer.

31. (Original) The acoustic window of claim 1, wherein the window has at least two cores bonded together, and having at least one septum ply in between the cores.

32. (Original) The acoustic window of claim 1, having at least seven core layers bonded together and having at least one septum ply in between each core layer.

33. (Original) The acoustic window of claim 1, wherein the septa have a flexural stiffness of more than 2.5 x 10^6psi.

34. (Original) The acoustic window of claim 1, wherein the septa have a flexural stiffness of more than 4.0 x 10^6psi.

35. (Original) The acoustic window of claim 1, wherein the laminate includes an additional galvanic insulation layer for placement between the laminate and any metallic surface to which the laminate is attached.

36. (Original) The acoustic window of claim 1, wherein the septa and/or core have an acoustic impedance matching seawater within ± 10%.

37. (Original) The acoustic window of claim 1, wherein the edges of the laminate are encapsulated with a structural edge band material.

38. (Original) The acoustic window of claim 1, wherein the window is formed as a curved or dome shaped structure.

39. (Original) The acoustic window of claim 1, which further includes means for mounting said window.

40. (Original) The acoustic window of claim 1, wherein the septa has acoustic impedance of less than $2.0 \times 10^6 kg/m^2-s$.

41. (Original) The acoustic window of claim 1, wherein the laminate includes an additional galvanic insulation layer selected from the group consisting of glass fiber composition, glass bead compositions, polymeric compositions, elastomeric compositions, polyurethane compositions, rubber compositions, epoxy compositions, acrylic compositions, and combinations thereof.

42. (Original) The acoustic window of claim 1, which further includes a coating selected from the group consisting of primers, paints, polymeric, elastomeric, acoustic damping, cosmetic, camouflage, electromagnetic, ultraviolet resistant, fouling resistant, color, impact resistant, and combinations thereof.

43. (Original) The acoustic window of claim 1 wherein the septa have a tensile modulus and/or a compression modulus of more than 7×10^6 psi.

44. (Original) The acoustic window of claim 1 hwerein the septa have a tensile modulus and/or a compression modulus of more than 10 x 10^6 psi.

45. (Original) The acoustic window of claim 1 wherein the core layer and/or the septa further employ fibers selected from the group consisting of thermoplastic, polyethylene, polyvinyl alcohol, mineral, carbon, graphite, cellulose, aramid, polybenzoxazole, metal, and combinations thereof.

46. (Original) The acoustic window of claim 1 wherein the core has a shear loss factor of 0.1 or higher.

47. (Original) The acoustic window of claim 1 wherein the core has a core sound velocity of about 1200 to 1800 meters per second.